13. DISPERSAL OF INTERTIDAL SESSILE BARNACLE *TETRACLITA SQUAMOSA RUFOTINCTA* (PILSBRY) BY WATER CURRENTS

(*With two text-figures*)

A report on the occurrence of *Tetraclita* (*Tetraclita*) *squamosa rufotincta* Pilsbry at two localities on the west coast of India (Wagh & Bal 1969) was based on the observations made prior to 1965 and was thought to be a case of stray occurrence. However, further observations at other localities on the Kathiawar Coast of Western India show that these forms are well established in the region. In addition, Utinomi (1969) has recorded their occurrence from Madagascar, Red Sea, Gulf of Aden and Strait of Hormus of Iranian Gulf. Thus, it appears that this subspecies has almost a continuous distribution all along the area extending from east coast of Africa to southern Kathiawar Coast.

In this communication an attempt has been made to explain the dispersal of this non-fouling, intertidal barnacle believed to be an endemic form of the east African Coast (Ekman 1967). It is assumed that this spreading might be through its planktonic larvae in turn carried by the water currents prevailing in this region. Similar dispersal of certain species of echinoderms from East Africa or Red Sea to Hawaii or Outer Polynesia has been reported by Mortensen (1931, 1937, 1938). This assumption is also supported by the observations on breeding activity of intertidal sessile barnacles of the Indian West Coast as well as on the circulation of surface waters in the northern region of Indian Ocean. It has been observed that breeding activity of different species of sessile barnacles found in the intertidal region at Bombay and at other places on the west coast of India is at its highest during March-June and September-October (Pillai 1958 ; Karande & Palekar 1963 ; John 1964 ; Wagh 1965). The circulation of surface waters during these months (Figs. 1 & 2) especially near the Arabian and Kathiawar coasts (Varadachari & Sharma 1967) appears to be helpful for carrying planktonic larvae to suitable locations thereby enabling their settlement.

Thus, there are very strong indications of such a phenomenon taking place although it needs further factual data on breeding behaviour of these forms in particular and examination of plankton samples of the area. It is also expected that further spread of these barnacles along the west coast of India may be possible if their planktonic larvae find the

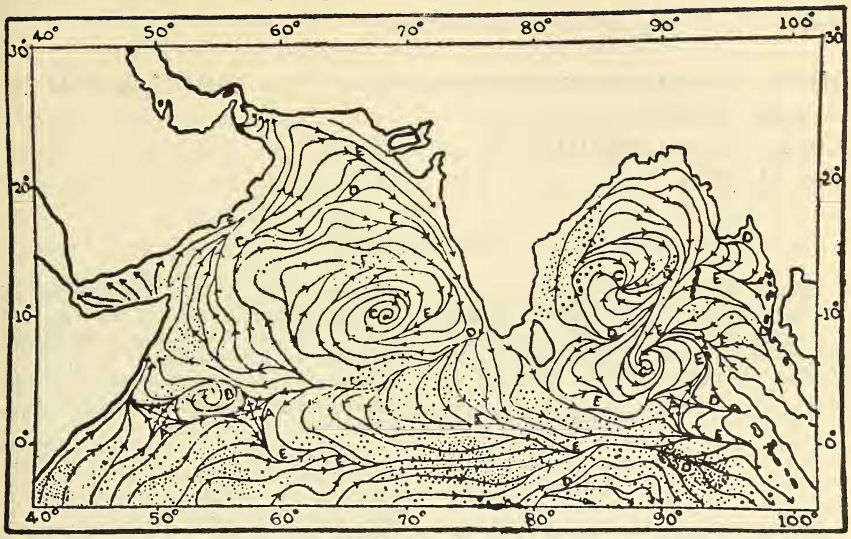

Fig. 1

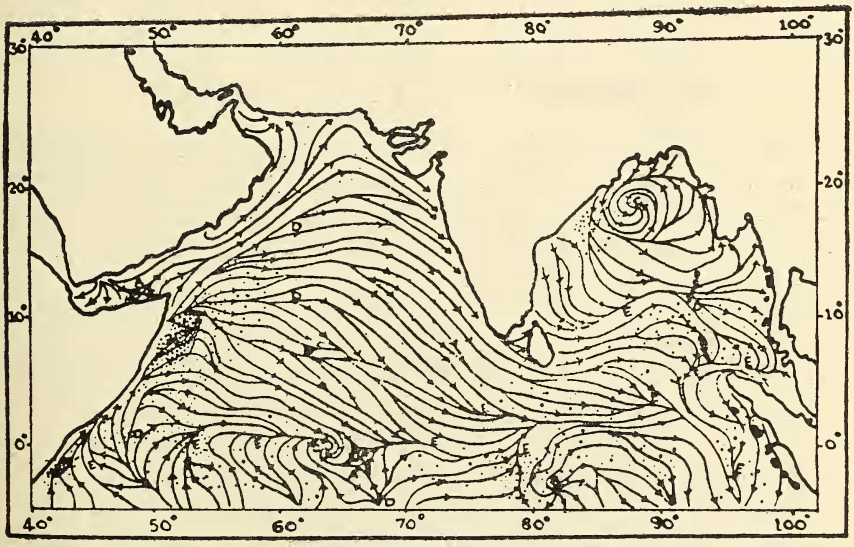

Fig. 2

Figures 1 and 2 showing the mean surface circulation near the Arabian and Kathiawar coast for the months of April and September respectively. (after Varadachari and Sharma 1967).

hydrographic conditions in the area between the Kathiawar and Konkan coasts (Gulf of Cambay) favourable.

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14. ABUNDANCE OF FLEAS—A REVIEW

There seems to be nothing unusual in the information communicated by Leonard Woolf in his AN AUTOBIOGRAPHY OF THE YEARS 1904-1911 [*J. Bombay nat. Hist. Soc.* **68** (3) : 862], as his observations constitute a mere duplication of similar experiences reported long before him (as far back as the sixteenth century).

Extremely large number of fleas are usually found in uninhabited places like deserted huts, vacant houses, grain storage, vacant godowns, etc. Here the fleas lie dormant within their cocoons for an indefinitely long period until they receive the requisite mechanical stimulus for their emergence. Any disturbance however slight such as vibration caused by the foot-fall of a passing animal or a human being is enough to precipitate hatching, and the fleas burst out in enormous number within a split second. It is also fact that when their cocoons are opened for examination, they are found to contain living fleas. Also, the houses that have been vacant for several weeks may be badly infested with adult fleas, because these insects are able to live without food for a very long

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